

Helpful Hint—How Toolkit Calculates Acres

Applies to Versions:	Customer Service Toolkit 2.0.1
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Purpose

This Helpful Hint explains how the Customer Service Toolkit calculates acres.

Background

The Customer Service Toolkit calculates acres automatically for polygon themes. However, when and how this calculation occurs is not always apparent. The **General Information** section answers these questions about the calculation:

- When are acres calculated?
- When are acres NOT calculated?
- How can I start an acre calculation?
- How can I prevent an acre calculation?
- How are acres rounded?

The **Detailed Information** section answers these questions:

- How are acres calculated?
- Which data fields are updated when acres are calculated?
- What is the relationship between map units and acre calculations?

General Information

When are acres calculated?

If the Customer Service Toolkit toolbar is open and active, it calculates acres when:

1. Acres for an active polygon theme have not been calculated recently¹.
2. You edit a polygon theme and select **Theme, Stop Editing**.
3. You create a new polygon theme with the **Buffer** tool.
4. You create a soils map theme with the **Soils Map** tool.
5. You use an ArcView Edit tool such as **Combine, Union, Subtract, or Intersect**.

¹ Look for details on this process in the section "How are acres calculated?"

When are acres NOT calculated?

Acres are not calculated automatically when:

1. You add a polygon theme to a view.
2. You use an ArcView GeoProcessing tool, e.g. Clip or Intersect, and a new theme is added to the view.
3. You edit a polygon theme table and select **Table, Stop Editing**.


How can I start an acre calculation?

To force an acre calculation for a polygon theme:

1. Make the theme active.
2. Select **Start Editing** from the **Theme** menu.
3. Select **Stop Editing** from the **Theme** menu.

How can I prevent an acre calculation?

You may not want to calculate acres for some themes because the calculation can take several moments while each feature is updated. Use either of these options to prevent the calculation:

- Option 1: Before you add the theme to the view, use Windows® NT® Explorer to set the shapefile properties to **Read Only**.
- Option 2: Click () to close the Customer Service Toolkit toolbar.

How are acres rounded?

Acres are calculated and rounded to one decimal place. The rounded value is saved in the theme table (.dbf). A rounding effect can occur when you select several land units, then view the sum of the acres with the **Total Acres** tool. The sum may vary between plus or minus three tenths of an acre.

Which data fields are updated when acres are calculated?

Two data fields, **CalcAcres** and **CalcAcTime**, are updated when the Toolkit calculates acres. For land unit themes, the **Program Acres (LU_Acres)** data field is **not** updated automatically.

Detailed Information

How are acres calculated?

When the Customer Service Toolkit toolbar is open and active, it initiates a script called **CalculateAcres** when certain conditions are met for the active theme. These conditions are listed in the table below. The toolbar has a timer that monitors the active theme and periodically checks these conditions.

Condition	Action	
1. Is the active theme a polygon theme?	Yes	Continue to #2.
	No	No action.
2. Is the active theme's shapefile (.shp) set to Read Only?	Yes	No action.
	No	Start the CalculateAcres script. Continue to #3.
3. Does the active theme have features?	Yes	Continue to #4.
	No	Display a message. End script.
4. Are map units set for the view?	Yes	Continue to #5.
	No	Display a message. End script.
5. Do the columns CalcAcres and CalcAcTime appear in the theme table?	Yes	Continue to #6.
	No	Add the columns. Continue to #6.
6. Is CalcAcTime more recent than the theme's shapefile (.shp) file date?	Yes	The script assumes that acres are current. No recalculation occurs. End script.
	No	Compute CalcAcres for each feature. Update CalcAcTime . End script.

During the calculation, the word "Calculating" replaces the title on the toolbar, e.g.



"Toolkit View (ABC Farms Tract 3832)". When the calculation is done, the title reappears on the toolbar.

What is the relationship between Map Units and acres calculations?

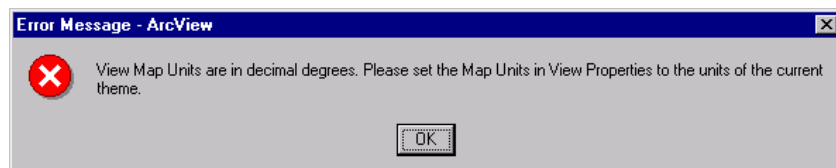
Before an automatic calculation of acres occurs, the **CalculateAcres** script looks to see that **Map Units** for the current view are set to one of these values:

Map Unit	Acres Conversion Factor
Meters	0.0002471
Feet	0.00002296
Yards	0.00020
Miles	640
Kilometers	247.1

If **map units** are set, the area of each feature is multiplied by its conversion factor, rounded to the nearest tenth, and placed in the **CalcAcres** column of the theme table. If **Map Units** are set to a value different from the units used to create the theme, acres are calculated, but the values will not be correct. If **Map Units** have not been set, this message appears:



If **Map Units** are set to decimal degrees, this message appears:



Distance Units are not used to calculate acres.